



THE DATASHEET OF ZTX658



ZTX658

NPN SILICON PLANAR MEDIUM POWER HIGH VOLTAGE TRANSISTOR

ISSUE 2 – APRIL 2002

FEATURES

- * 400 Volt V_{CE0}
- * 0.5 Amp continuous current
- * $P_{tot} = 1$ Watt

APPLICATIONS

- * Telephone dialler circuits

ABSOLUTE MAXIMUM RATINGS

PARAMETER	LIMIT
Collector-Base Voltage	
Collector-Emitter Voltage	
Emitter-Base Voltage	
Peak Pulse Current	
Continuous Collector Current	
Power Dissipation at $T_{amb}=25^{\circ}\text{C}$ derate above 25°C	
Operating and Storage Temperature	

ELECTRICAL CHARACTERISTICS

PARAMETER	SYMBOL	MIN	MAX	UNIT
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	40		
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	40		
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	5		
Collector Cut-Off Current	I_{CBO}			
Collector Cut-Off Current	I_{CBO}			
Emitter Cut-Off Current	I_{EBO}			
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$			
Base-Emitter Saturation Voltage	$V_{BE(sat)}$			
Base-Emitter Turn On Voltage	$V_{BE(on)}$			
Static Forward Current Transfer Ratio	h_{FE}	50	50	
		40	40	

ELECTRICAL CHARACTERISTICS (at $T_{amb} = 25^{\circ}\text{C}$ unless otherwise stated).

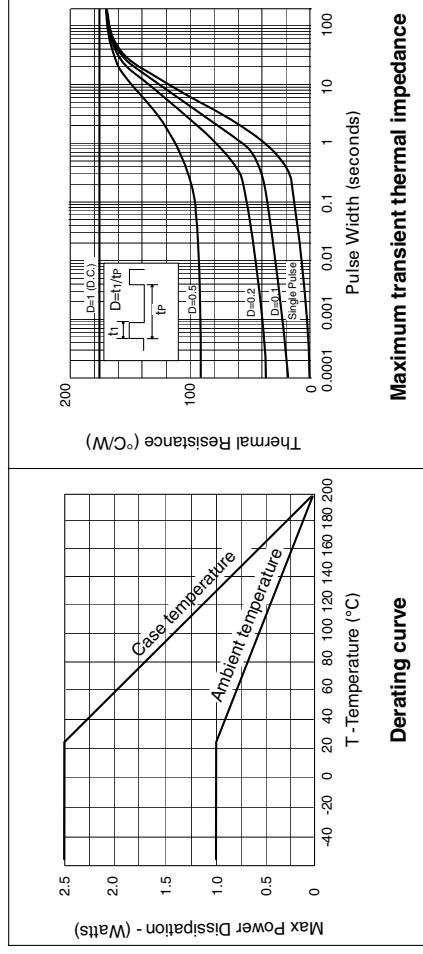
PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Transition Frequency	f_T	50			MHz	$I_C=20\text{mA}$, $V_{CE}=20\text{V}$ $f=20\text{MHz}$
Output capacitance	C_{obo}		10		pF	$V_{CB}=20\text{V}$, $f=1\text{MHz}$
Switching times	t_{on} t_{off}		130 3300		ns	$I_C=100\text{mA}$, $V_C=100\text{V}$ $I_B=10\text{mA}$, $I_{B2}=-20\text{mA}$

* Measured under pulsed conditions. Pulse width=300µs. Duty cycle ≤2%

THERMAL CHARACTERISTICS

PARAMETER	SYMBOL	MAX.	UNIT
Thermal Resistance: Junction to Ambient ₁	$R_{th(j-amb)1}$	175	$^{\circ}\text{C/W}$
Junction to Ambient ₂	$R_{th(j-amb)2}$ †	116	$^{\circ}\text{C/W}$
Junction to Case	$R_{th(j-case)}$	70	$^{\circ}\text{C/W}$

† Device mounted on P.C.B. with copper equal to 1 sq. Inch minimum.



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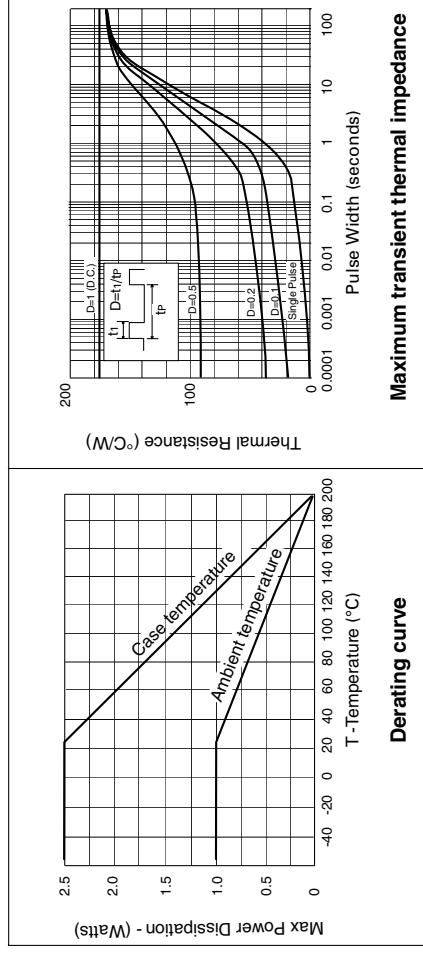
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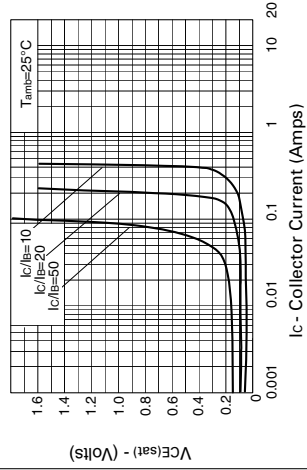
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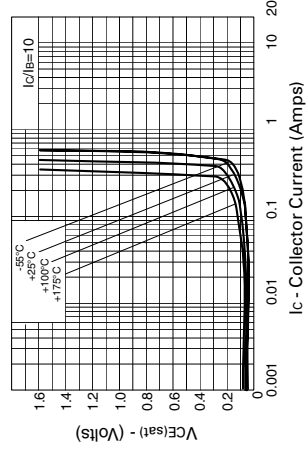


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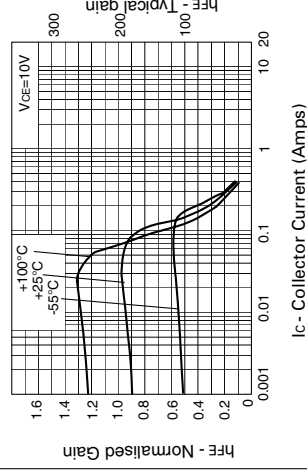
TYPICAL CHARACTERISTICS



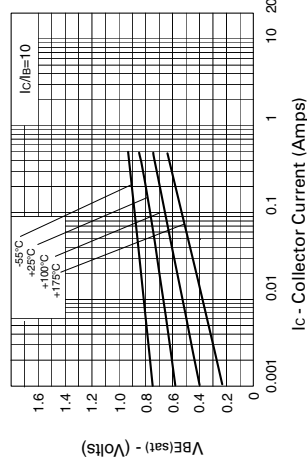
VCE(sat) v IC



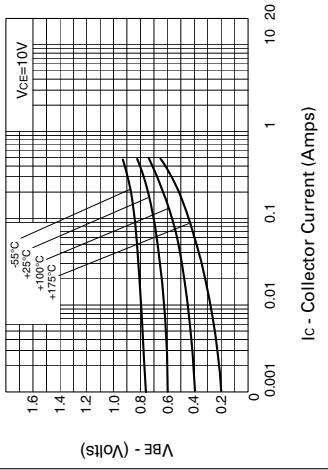
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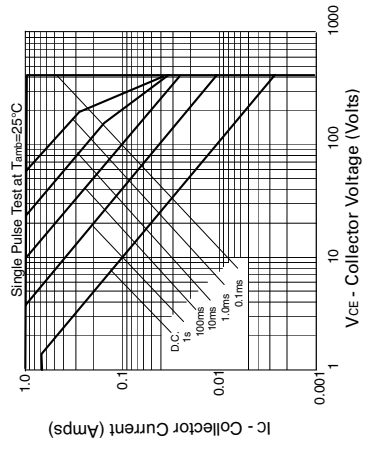
hFE v IC



VBE(sat) v IC





VBE(on) v IC



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-  Alternative Solution
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